CLAIMS

WHAT IS CLAIMED IS:

1. A method of providing a representation of an object in a computer graphics system:

rendering a 3D computer graphic object to a 2D texture map; and

creating a set of sequentially varying scaled resolution versions of the 2D texture map representative of the object at corresponding predetermined viewing distances.

2. The method of claim 1, further comprising blending at least two sequentially adjacent versions to provide an anti-aliased representation of the object at a corresponding predetermined viewing distances.

3. The method of claim 1, wherein an updated representation of the object is provided when a viewing angle of the object changes or lighting on the object changes.

4. The method of claim 1, wherein blending further comprises trilinear filtering.

5. The method of claim 1, further comprising rendering the 3D computer graphic object to a 2D texture map at a resolution greater than the resolution of the 3D computer graphic object.

6. The method of claim 1, further comprising rendering the 3D computer graphic object to a 2D texture map at a resolution of 256 by 256 texels.

7. The method of claim 1, further comprising:

applying at least one of the scaled resolution versions to a single polygon; and

rendering the polygon to a display device.

8. The method of claim 1, wherein the step of rendering further comprises:

internally rendering, in a first pass, the 3D computer graphic object to a 2D texture map using the color values and alpha values of the 3D computer graphic object, and the color values of the 2D texture map; and

internally re-rendering the 3D computer graphic object to a 2D texture map to overwrite the alpha values rendered in the first pass, with corrected alpha values.

9. The method of claim 8, further comprising assigning an alpha value of zero (0) to the 2D texture map.

10. The method of claim 8, further comprising:

selecting maximum color values rendered in the first pass; and

internally rendering, in a second pass, the 3D computer graphic object to a 2D texture map with the maximum color values.

11. The method of claim 10, wherein the maximum color value is selected according to the formula:

$C = \text{MAX}(Cs, Cd)$;

where C represents the maximum color value drawn to each texel in the texture map, Cs represents the color value of the 3D computer graphic object, Cd represents the color value of the 2D texture map, and the function MAX determines the maximum of Cs and Cd.

12. The method of claim 8, wherein the step of internally rendering, in a first pass, is performed according to the formula:

$C = As*Cs + (1-As)*Cd$;

where *C* = represents the final color drawn to the 2D texture map, *As* represents the alpha value corresponding to the 3D object, *Cs* represents the color value of the 3D computer graphic object, and *Cd* represents the color value of the 2D texture map.

13. A method of anti-aliasing a computer graphics imposter comprising:

creating an imposter of an object;

creating MIP maps for the imposter; and

blending the MIP maps to provide an anti-aliased imposter.

14. A method of preserving translucency in a computer graphics imposter comprising:

internally rendering, in a first pass, a 3D computer graphic object to a 2D texture map using color values and alpha values corresponding to the 3D computer graphic object, and color values corresponding to the 2D texture map; and

internally re-rendering the 3D computer graphic object to a 2D texture map to overwrite alpha values rendered in the first pass with corrected alpha values.

15. A computer graphics generator apparatus comprising;

a rasterizer for rendering a 3D computer graphic object to a 2D texture map; and

a texture mapper for creating sequentially varying scaled resolution versions of the 2D texture map representative of the object at corresponding predetermined viewing distances.

16. A computer graphics system comprising:

a host computer;

the computer graphics generator apparatus card comprising a rasterizer for rendering a 3D computer graphic object to a 2D texture map, and a texture mapper for creating sequentially varying scaled resolution versions of the 2D

texture map representative of the object at corresponding predetermined viewing distances; and

a host interface for coupling the computer graphics generator apparatus card to the host computer.

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